Yellowtail Area Coordinated Resource Management (Goal 2) – Jerry Altermatt

The Yellowtail Area Coordinated Resource Management (CRM) team continued to manage invasive plants on agency and private lands in the Lower Shoshone and Bighorn River bottom lands near Lovell, Wyoming. The CRM consists of the four landowners on the Yellowtail WHMA (National Park Service, WGFD, BLM, and BOR), neighboring private landowners, the Bighorn County Weed and Pest, NRCS, Shoshone Conservation District and other interested parties. The CRM was formed in 2013 in response to concerns from landowners/managers about noxious weeds. The terrestrial habitat biologist serves as chairman of the CRM and has been responsible for project planning and implementation, as well as writing and submitting grant applications for the project. The project is nearing completion with a major accomplishment of removing Russian olive and salt cedar on over 2,000 acres of riparian area on the Shoshone River (Figure1).

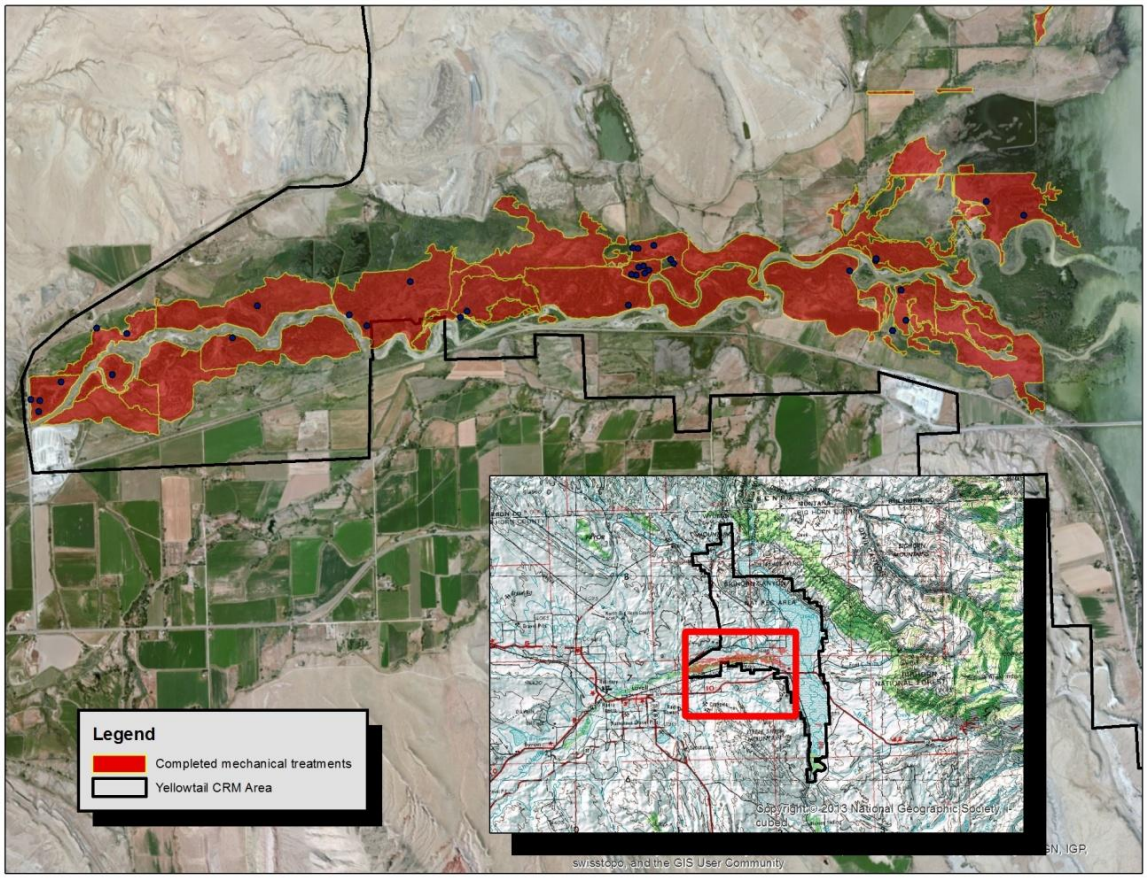


Figure1 – Areas mechanically treated to remove Russian olive.

The following activities were accomplished on the CRM area in 2013:

- Conducted mechanical treatments on 330 acres of well established Russian olive and salt cedar using hydro-bunchers with vertical-shaft mastication heads (Figure 2).
- Conducted herbicide treatments on 419 acres of Russian olive re-sprouts and salt cedar using a spray crew with backpack sprayers.

- Conducted chainsaw/herbicide treatments on approximately 40 acres of mature Russian olives.
- Planted 500 buffaloberry shrubs (Figure 3).
- Used 750 goats in a targeted grazing program to reduce Russian knapweed.
- Continued bio-control using *diarhobda elongata*, a leaf beetle that targets salt cedar plants.

Figure 2 – Hydro-buncher mulching Russian olive.

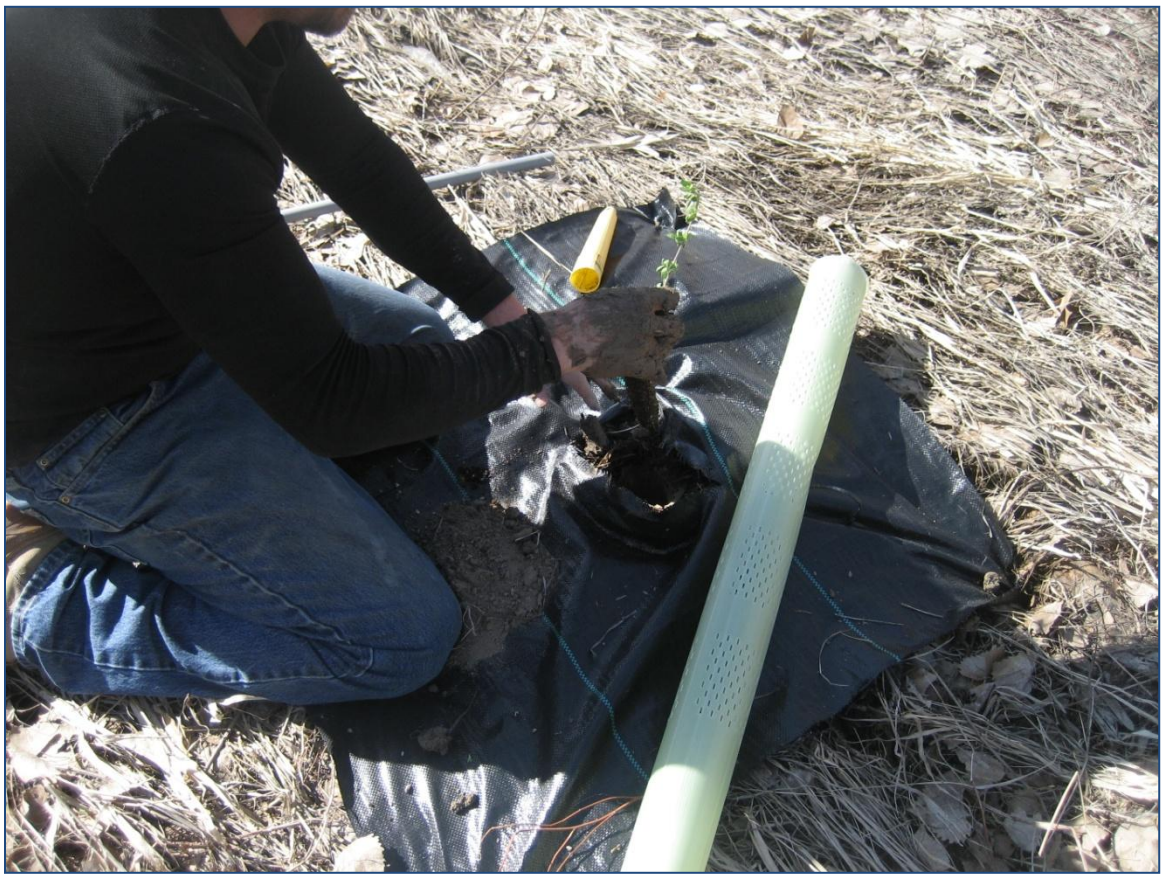


Figure 3 – Planting buffaloberry seedlings with weed barrier and browse protection tube.

The CRM and WGFD, in partnership with The Nature Conservancy and Wyoming Weed and Pest Council, produced a brochure entitled, "Russian Olive: Practical Considerations for Big Horn Basin Landowners." The brochure is an effort to disseminate information to landowners on when, where, how and why to manage Russian olive. The knowledge base formed from over ten years of Russian olive management on the CRM contributed to much of the information and recommendations contained in the brochure. The brochure is available at the WGFD Cody regional office or any weed and pest or NRCS/Conservation District office in the Big Horn Basin.

Big Fork Wildfire Restoration (Goal 2) – Jerry Altermatt

On April 27, 2013, the Big Fork Fire burned over 1,500 acres on the Yellowtail Area Coordinated Resource Management Area (CRM), including areas within the Yellowtail WHMA and adjacent private lands (Figure 4). The wildfire burned within the Shohone River floodplain including approximately 460 acres of cottonwood forest, 680 acres of shrub/grassland, 300 acres of wetland and 70 acres of irrigated permanent cover.

Figure 4 – Big Fork Wildfire burning the Shoshone River riparian on the Yellowtail WHMA.

Included in the burn area were 752 acres that had been treated to remove Russian olive between 2009 and 2013. These areas, because of the heavy biomass in the form of Russian olive slash, burned with high intensity and prolonged heat, causing severe fire effects. This has resulted in high herbaceous plant mortality and extensive areas of bare ground. Noxious weeds including white-top, Russian knapweed, and Canada thistle have proliferated throughout the burn area but especially in areas of highest fire severity (Figure 5). The Teton Fire Effects Crew, based out of Jackson, WY, with assistance from WGFD and Bighorn Canyon National Recreation Area personnel conducted an intensive survey of the wildfire area to determine fire severity. Satellite imagery coupled with 47 randomly located ground plots were used to produce maps showing degrees of overall burn severity (Figure 6), cottonwood mortality, herbaceous community effects (native plant mortality and noxious weed proliferation) and soil severity (amount of bare ground).

Figure 5 – Typical high severity burn site after the growing season on the Big Fork Fire. Note the amount of bare ground and the presence of Russian knapweed in the foreground.

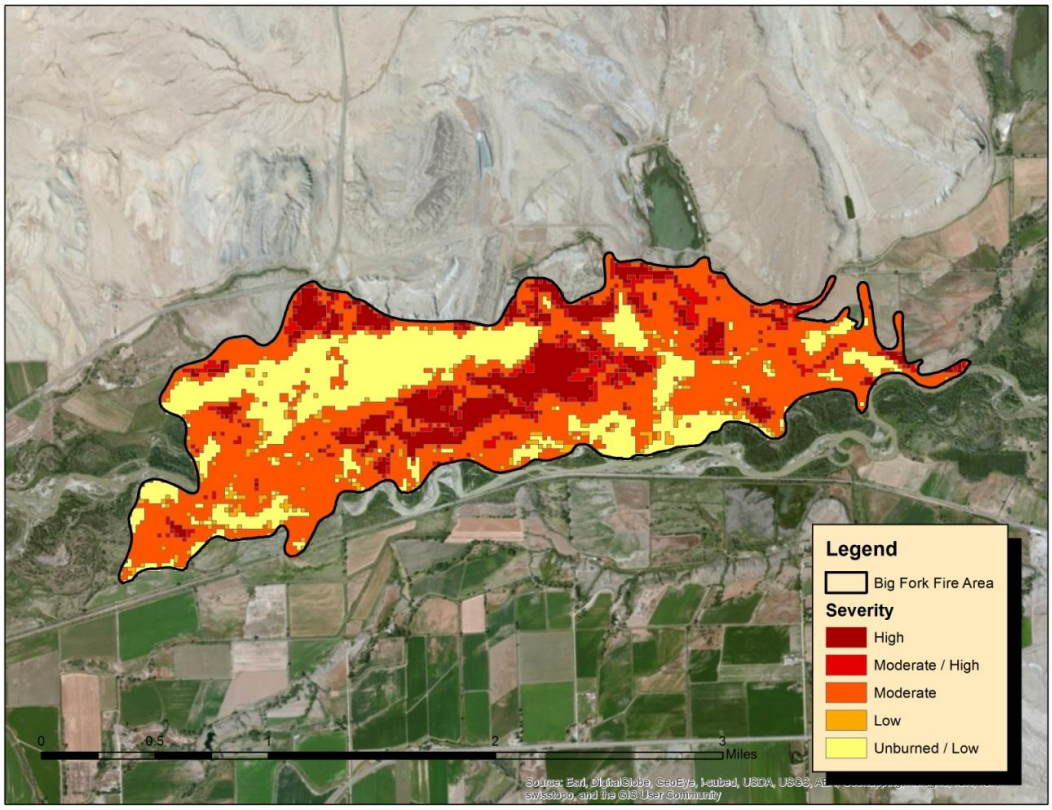
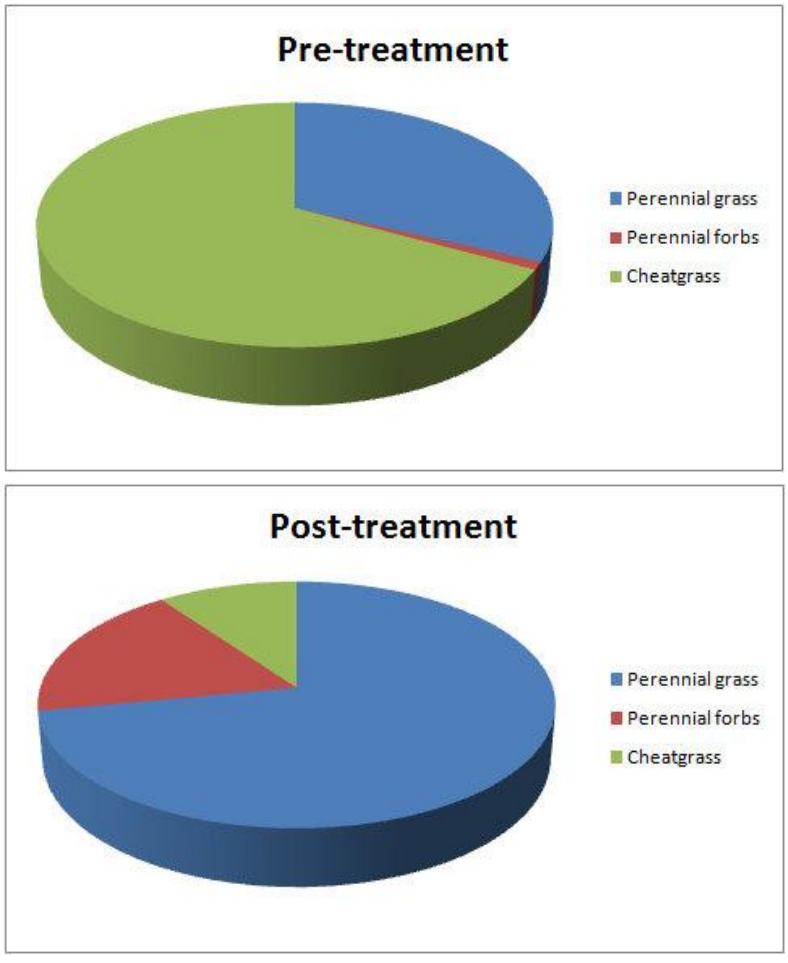


Figure 6 – Map showing levels of severity of the Big Fork Wildfire.

The CRM is proposing to conduct fire restoration activities in the burn area including noxious weed control and native plant establishment. Priority treatment areas will be those areas with highest fire severity as identified in the burn severity mapping effort. Funding has been requested from the Wyoming Wildlife and Natural Resources Trust, Wyoming Game and Fish Habitat Trust Fund, and Wyoming Wildlife - The Foundation.

Black Mountain Wildfire Restoration (Goal 2) – Jerry Altermatt

Monitoring and assessment were conducted on cheatgrass control areas and sagebrush plantings in the 1996 Black Mountain and 2012 Zimmerman Butte wildfires. Vegetation cover monitoring conducted in July 2013 within the 2011 aerial herbicide application indicated significant control of cheatgrass (Figure 7). Occular assessments made in summer and late Fall 2013 of aerial herbicide applications conducted in 2012 indicated nearly 100% control of cheatgrass despite above average fall precipitation that resulted in high germination of cheatgrass outside of treatment areas (Figure 8). A total of 9,535 acres were treated in 2011 and 2012. Planning and funding requests were made for additional herbicide treatments in 2014. Sagebrush plantings conducted in 2009 and 2011 continue to exhibit high survival rates and prolific seed production.



Figures 7A & B – Pre-treatment and post-treatment (two growing seasons after treatment) percent herbaceous cover on a sandy loam site on the Lower Nowater Allotment.

Figure 8 – Lower Nowater allotment two years post-treatment showing contrast between treated (right) and untreated (left). Control of cheatgrass in this area was nearly 100% (yellowish color on the left is cheatgrass).

BLM/WGFD Cooperative Prescribed Fire/Habitat Enhancement Projects (Goal 2) – Jerry Altermatt

Approximately 1,450 acres of juniper were treated with prescribed fire in the Little Mountain area near Lovell (Figure 9). The objectives of the treatments were to remove encroaching junipers from sagebrush communities to improve elk and deer habitat. The burns were conducted by the BLM Cody Field Office with assistance from WGFD and partial funding by Rocky Mountain Elk Foundation. The treatments are part of a larger prescribed fire project in the Little Mountain area that began in 1997 totaling over 11,000 acres treated.

Figure 9 – Prescribed fire in juniper encroached sagebrush community on Little Mountain.

Production/Utilization Surveys (Goal 2) – Jerry Altermatt

Regional wildlife personnel collected production/utilization data at ten sagebrush transects during 2013. Annual leader production was below the ten-year average, reflecting precipitation that was generally below average throughout the Bighorn Basin in 2013 (Figure 10). Utilization at all transects in Spring 2012 was above average, with the exception of one transect that was below the 35% utilization level considered to be the threshold for over-use (Figure 11). Light utilization may indicate that populations are in balance with the amount of winter forage or may be a reflection of the relatively mild winters that the Cody Region has experienced which distributes big game more widely over winter ranges rather than concentrating animals on crucial winter ranges where utilization studies are located.

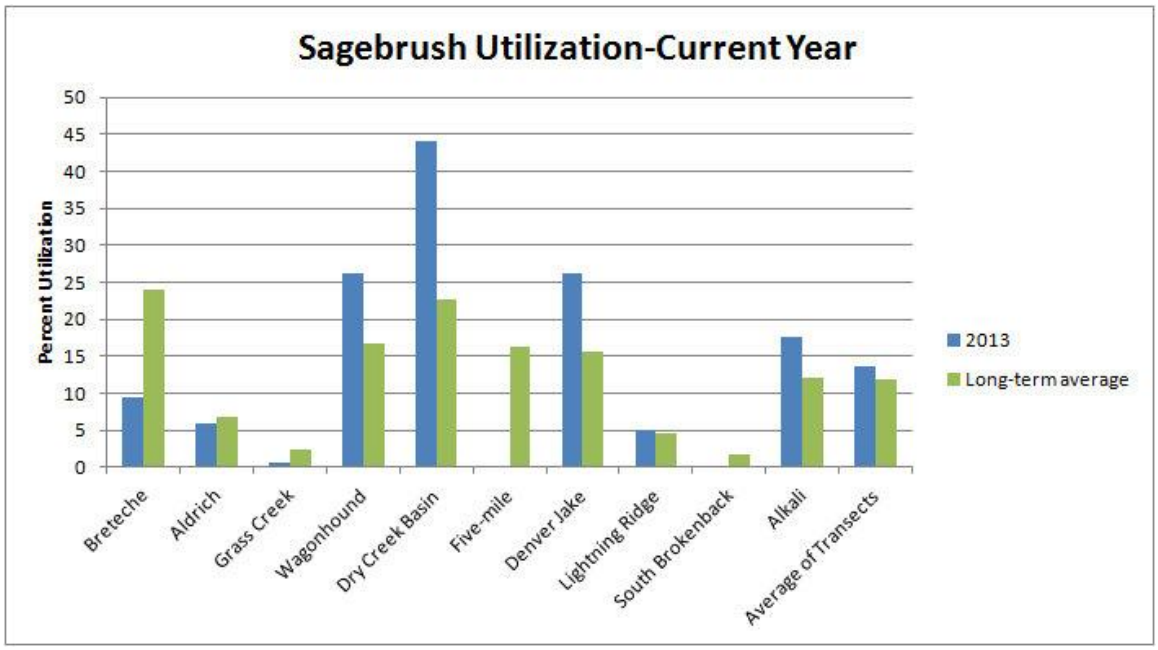


Figure 10 – Annual production of sagebrush at eight locations in the Cody Region.

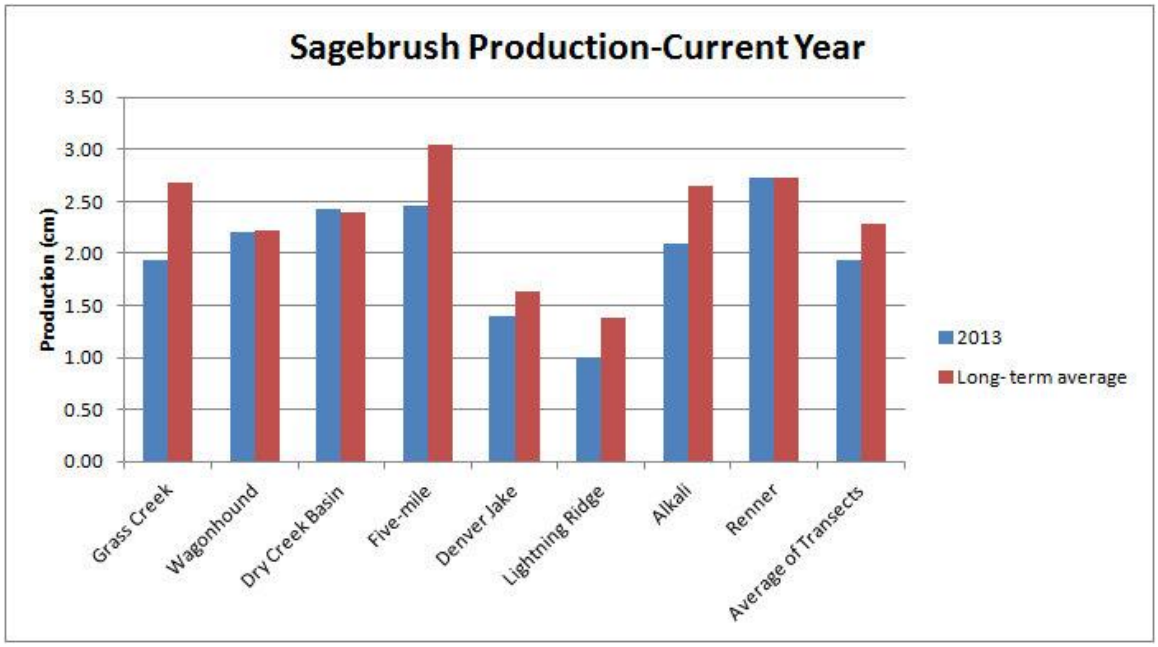


Figure11 – Utilization of sagebrush expressed as percent annual leaders browsed at ten locations in the Cody Region.

Herbaceous production and utilization were measured in 2013 at six sites on the Absaroka Front in areas where monitoring elk use is a priority. Production varied across sites according to local precipitation (Figure 12). Utilization by elk on winter ranges continues to be high in Sunlight Basin, averaging 68% and exceeding 80% at two sites (Figure 13).

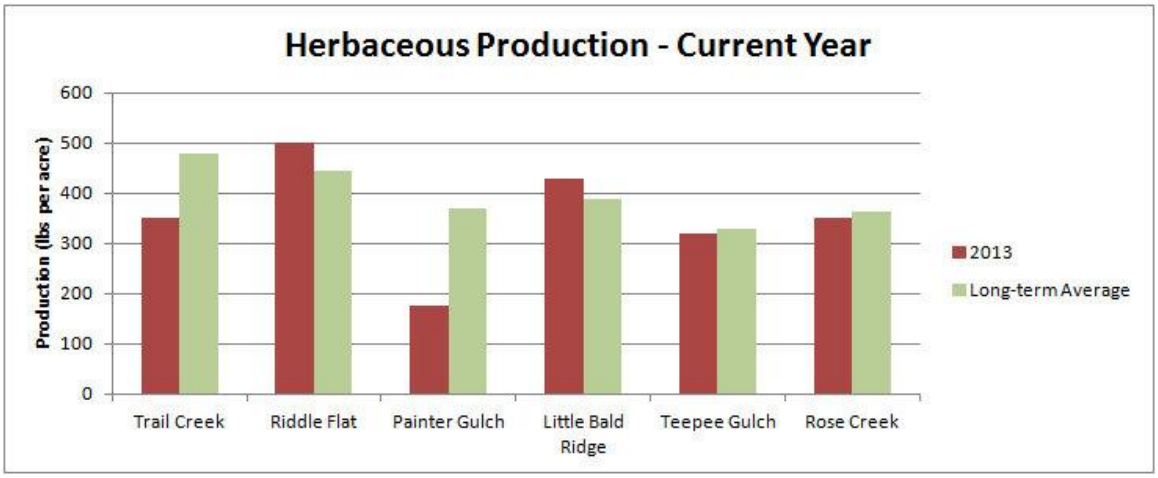


Figure12 – Annual production of herbaceous vegetation at six locations in the Cody Region.

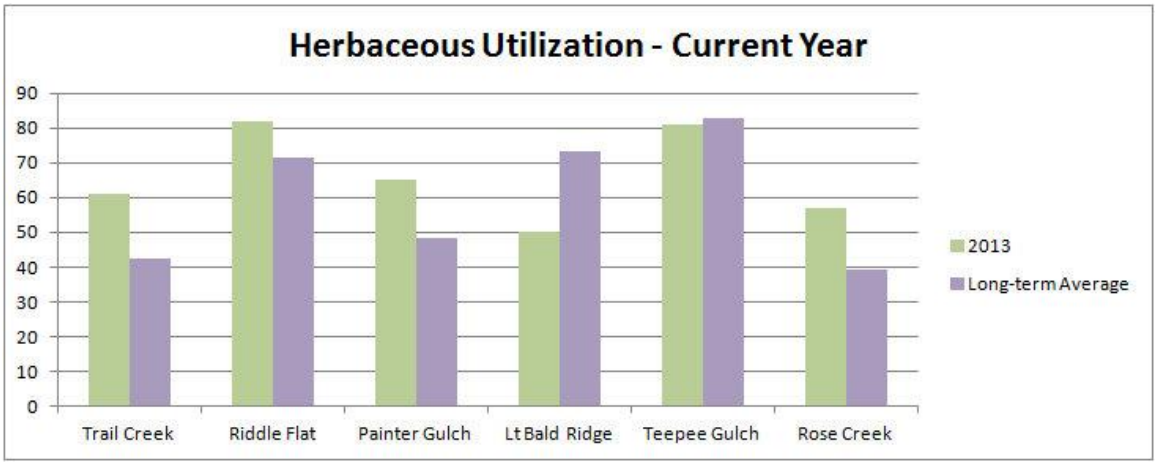


Figure13 – Utilization of herbaceous vegetation at six locations in the Cody Region.

Heart Mountain Fence Modification & Aspen Enhancement (Goal 2) – Jerry Altermatt

The final phase of a fence modification project on The Nature Conservancy's Heart Mountain Ranch and the E&B Landmark Ranch north of Cody was completed. Approximately four and one-half miles of woven and 6-wire barbed wire fence were removed and replaced with two miles of 3-wire high tensile electric fence and two and one-half miles of wildlife-friendly barbed/smooth wire fence to reduce wildlife movement restriction, injury and mortality, and improve landowner relations (Figure 14). Over 11 miles of fence have been modified on the two ranches since 2012. A contract is being prepared for treatment of approximately 40 acres of conifer-encroached aspen on the Heart Mountain Ranch in 2014. The treatment will consist of chainsaw-felling conifers within aspen stands that could not be burned during prescribed fires conducted in 2006 (Figure 15).

Figure14 – Volunteers rolling up old barbed-wire fence.

Figure 15 – Conifer encroached aspen on Heart Mountain that will be treated in Spring 2014.